

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

**Bison I Wind Project – Minnesota Power, an
operating division of ALLETE, Inc.
75.9 MW Wind Farm – Morton and Oliver counties
Siting Application**

Case No. PU-09-151

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

September __, 2009

Appearances

Commissioners Kevin Cramer, Tony Clark, and Brian P. Kalk.

David R. Moeller, Attorney, Minnesota Power, 30 West Superior Street, Duluth, MN 55803, on behalf of the Applicant.

Annette Bendish, Legal Counsel, Public Service Commission, State Capitol, Bismarck, North Dakota 58505, on behalf of the Public Service Commission.

Al Wahl, Administrative Law Judge, Office of Administrative Hearings, 1701 North Ninth Street, Bismarck, North Dakota 58501-1882, as Procedural Hearing Officer.

Preliminary Statement

On April 7, 2009, Minnesota Power, an operating division of ALLETE, Inc. (Minnesota Power) submitted a Letter of Intent (LOI) to submit an application for a Certificate of Site Compatibility for a 75.9 MW wind energy conversion facility in Morton and Oliver counties, North Dakota. Minnesota Power requested in its LOI that the Commission shorten the one-year waiting period required between filing of the LOI and the filing of an application.

On April 13, 2009, the North Dakota Public Service Commission (Commission) shortened the one-year waiting period to one day, and assessed a filing fee of \$85,000.00 and assigned the project Case No. PU-09-151.

On May 12, 2009, Minnesota Power filed an Application for a Certificate of Site Compatibility (Application) authorizing construction of the 75.9 MW Bison I Wind Project (Bison I) consisting of up to 33 wind turbine generators and associated facilities in Morton and Oliver counties, North Dakota.

On July 8, 2009, the Commission deemed the Application complete and issued a Notice of Filing and Notice of Hearing, scheduling a public hearing for August 25, 2009, at 10:00 a.m. CT, at the Sunset Inn, 1305-8th St. N., New Salem, North Dakota. The Notice identified the following issues to be considered:

1. Will the location, construction and operation of the proposed facilities produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota?
2. Are the proposed facilities compatible with the environmental preservation and the efficient use of resources?
3. Will the proposed facility location minimize adverse human and environmental impacts while ensuring continued system reliability and integrity, and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?

On August 12, 2009, Minnesota Power filed an executed Certification Relating to Order Provisions – Wind Energy Conversion Facility Siting.

On August 18, 2009, Minnesota Power submitted a map detailing the proposed final locations for turbines. Minnesota Power also supplemented its Application with additional information on wetland delineation, cultural resources surveys and agency consultation.

On August 25, 2009, a public hearing was held as scheduled. Having allowed all interested persons an opportunity to be heard, and having heard, reviewed, and considered all testimony and evidence presented, the Commission makes the following:

Findings of Fact

1. Minnesota Power, an operating division of ALLETE, Inc., is a Minnesota corporation and Minnesota public utility as defined under Minn. Stat. § 216B.02, subd. 4.
2. ALLETE, Inc. is registered to conduct business in the State of North Dakota, as evidenced by a Certificate of Good Standing issued by the North Dakota Secretary of State on October 28, 2008.
3. Minnesota Power proposes to construct and own a wind energy facility (the Bison I Wind Project) to be located in Morton and Oliver counties, North Dakota, approximately 10 miles northwest of New Salem, North Dakota. The project area consists of approximately 9,500 acres (15 square miles). The wind turbines will be placed throughout the project site.

4. Associated facilities to be constructed within the project area include access roads, underground electrical and feeder lines, an electrical substation, meteorological towers, wind monitoring stations, and an operations and maintenance building.

5. North Dakota Century Code § 49-22-16 provides that no energy conversion facility site shall be designated if it violates any county or city land use, zoning, building rules, regulations or ordinances. Morton and Oliver counties require zoning permits for construction and Minnesota Power has obtained all necessary permits.

Project Design

6. The project will have a nameplate (gross) generating capacity of 75.9 MW, consisting of 33 2.3 MW wind turbines and associated facilities. Assuming net capacity factors of 45%, projected average annual output is estimated at 300,000 MWh per year.

7. Minnesota Power plans to use Siemens 2.3 MW turbines. These are utility-grade wind turbines with a nominal nameplate rating of 2,300 kW. Each turbine will have an 80-meter (262 feet) hub height and a 101 meter (331.4 feet) rotor diameter. Each turbine begins operating at wind speeds of 4.0 meters per second (m/s), or 8.9 miles per hour (mph), and reaches its rated capacity (2.3 MW) at a wind speed of 12 to 13 m/s (26.8 to 29.0 mph).

8. Each turbine is designed to operate at wind speeds of up to 25 m/s (55.9 mph) and can withstand wind speeds of more than 55 m/s (123.0 mph).

9. Each tower will be secured by a concrete foundation that can vary in design depending on the soil conditions. A control panel inside the base of each turbine tower houses communication and electronic circuitry. Each turbine is equipped with a wind speed and direction sensor that communicates to the turbine control system to signal when sufficient winds are present for operation. The turbine features variable-speed control and independent blade pitch to assure aerodynamic efficiency. Electricity generated by each turbine is brought to a pad-mounted transformer where the voltage is stepped up to a power collection line voltage of 34.5 kV. This electricity is collected by sets of underground power collection lines.

10. The 34.5 kV collector system transmits power to the project collector substation. At the project substation, the power will be transformed to 230 kV and transmitted via overhead 230 kV transmission lines, interconnecting with the transmission grid at the existing Square Butte Substation. Electrical energy is converted from AC to DC via a DC converter station within the Square Butte Substation. Electrical energy from the Bison I Wind Project will be transmitted to customers via the existing Square Butte DC Line which extends from the Square Butte Substation to Minnesota Power's Arrowhead Substation located near Duluth, Minnesota.

11. The United States Department of Energy (DOE) wind map for the state of North Dakota indicates that the wind resources within the project area are Class 5 and Class 6. The project will have annual average winds speeds of 8 mps (equivalent to 17.8 mph) or higher, comparable to wind power class ratings of 5 and 6, indicating an excellent wind resource. Wind data was collected from four meteorological towers constructed on the project site area.

12. Construction of the Bison I Wind Project is expected to take approximately two years, at a total estimated construction cost of \$175 million.

13. Minnesota Power anticipates commencing construction on Phase IA (16 wind turbines) in October, 2009, testing and operations by fall 2010, and commercial operation to begin in late 2010. Minnesota Power anticipates commencing construction on Phase IB (17 wind turbines) in fall 2010, testing and operations and commercial operations to begin in fall 2011.

14. Safety factors will be incorporated into the wind turbines. Each turbine will be equipped with a Supervisory Control and Data Acquisitions (SCADA) communication technology to control and monitor the turbine. In addition, each turbine is equipped with a lightning protection system and is grounded and shielded to protect against lightning.

15. Construction and operation of the Bison I Wind Project will conform to requirements of the National Electric Safety Code.

Siting Criteria

16. North Dakota Administrative Code Chapter 69-06-08 sets forth certain criteria to guide the Commission in evaluating the suitability of granting an application for the certificate of site compatibility. The criteria set forth in North Dakota Administrative Code § 69-06-08-01 are classified as Exclusion Areas, Avoidance Areas, Selection Criteria, and Policy Criteria. With the exception of prime and unique farm land, an energy conversion facility must not be sited within an Exclusion Area. The exception for prime and unique farm land is if the Commission finds that the prime farm and unique farm land that will be removed from use for the life of the facility is of such small acreage as to be of negligible impact on agricultural production, then such exclusion shall not apply. An energy conversion facility must not be sited within an Avoidance Area unless the applicant shows that under the circumstances there is no reasonable alternative. In determining whether an Avoidance Area should be designated for a facility, the Commission may consider, among other things, the proposed management of adverse impacts; the orderly siting of facilities; system reliability and integrity; the efficient use of resources; and alternate sites. In accordance with the Commission's Selection Criteria, an energy conversion facility shall be approved only if it is demonstrated that no significant adverse impacts will result from the location, construction, and operation of the facility. In accordance with the Commission's Policy Criteria, preference may be given to an applicant demonstrating certain benefits of the energy conversion facility.

17. Figure 15 of the Application labeled Prime Farmland Soil Distribution Map shows that approximately 33 percent of the site is prime farmland soils, most of it located in the southeast and northern portions of the site. The final layout will site only a limited number of turbines and facilities in prime farmlands. Even if all the turbines and access roads were placed within prime farmland areas, only approximately 41 acres of prime farmland would be impacted, or approximately one percent of prime farmland in the Project site. The Commission finds that unique and prime farm land to be disturbed by this energy conversion facility is of such small acreage as to be of negligible impact on agricultural production.

18. Approximately 50 acres of agricultural production will be impacted due to turbine placement, access roads, the operations and maintenance facility and project substation. Wind turbine configuration will not result in significant impacts to agricultural production. No impacts on the agricultural quality of the crop land are anticipated. If compaction of soils occurs during construction, Minnesota Power will work with landowners to alleviate the compaction.

19. Minnesota Power submitted evidence to demonstrate that the proposed energy conversion facility would not have significant impact on the Selection Criteria set forth in North Dakota Administrative Code § 69-06-08-01(3).

20. Minnesota Power submitted evidence to demonstrate its commitment to maximize the benefits of the proposed energy conversion facility as far as is possible so as to meet the Policy Criteria set forth in North Dakota Administrative Code § 69-06-08-01(4).

21. No significant adverse impact is foreseen on the ability of the affected area to provide community services, such as housing, health care, schools, police and fire protection, water and sewer, solid waste management, transportation, or public safety. The proposed project area is expected to be of economic benefit to the affected area.

22. The only Avoidance Areas identified within the project area is a wetland. The proposed road accessing turbine 32 along the west edge of section 4, T. 140 N., R. 86 W., will result in a quarter-acre fill of a jurisdictional wetland in the Sweet Briar Creek watershed. The impact will occur within the 66'-wide statutory easement along the section line, this low-quality wetland habitat is already partially impacted by an existing two-track agricultural road. The impact of Minnesota Power's road improvements upon the wetland resource will be negligible. Minnesota Power has chosen to utilize section line easements when practical, in order to minimize impact to agricultural production. Minnesota Power will obtain appropriate permits from the United States Army Corps of Engineers (USACE) as necessary for any jurisdictional wetlands impacted.

Cultural Resources:

23. With respect to historical resources that are not designated as Exclusion Areas, Minnesota Power has consulted the North Dakota State Historic Preservation Office (SHPO). Class I and Class III Cultural Resource Inventories, including review of SHPO's site and managed files, were conducted by HDR Engineering, Inc. of Minneapolis, Minnesota, for the project area. During the course of the inventory to date, four previously-recorded archaeological sites and six previously-recorded site leads were identified within the data gathering area. None of these sites or site leads will be impacted by the project. To date, two new archaeological resource sites were identified within the project area. One resources is a lithic scatter and the other is a prehistoric scatter with associated cairn and two depressions. These sites will be avoided by project construction. To date, SHPO has concurred with the "No Historic Properties Affected" and "No Significant Site Affected" determinations for this project. HDR Engineering will be conducting an additional survey due to the revised location of a few of the project facilities. A recommendation will be forwarded to SHPO for review, and seeking concurrence from SHPO.

Wetlands and Wildlife:

24. Minnesota Power has consulted with numerous local, state, and federal agencies, which are identified in Appendix C of the Application and Appendix C of the August 18, 2009 Supplement. Two agencies providing significant input were the North Dakota Game and Fish Department and the United States Fish and Wildlife Service (USFWS). Neither agency has objected to construction of the project.

25. The North Dakota Game and Fish Department indicated its primary concern is with disturbance of native prairie and wetlands. Minnesota Power met with North Dakota Game and Fish Department to discuss the project area and plans to mitigate any impacts. The disturbance of native prairie and wetlands will be minimal.

26. Concerns of the USFWS focused on migratory birds, wetlands, native grasslands, and threatened and endangered species. Minnesota Power will implement measures to avoid and minimize effects to wildlife at the proposed site by locating facilities away from habitat and wetlands when possible.

27. At the request of USFWS, Minnesota Power is developing an Avian and Bat Protection Plan (ABPP) that will be implemented during construction and for post-construction monitoring. The ABPP will include protocols for field technicians to report and document avian mortalities during routine maintenance operations.

28. Federally-listed whooping crane has been known to occur in Morton and Oliver counties. There is limited suitable roosting and foraging habitat for whooping cranes in the project area, so cranes may use the area at some point during the life of the project. The population size of whooping cranes in the area is small, and the project area is located in whooping crane migration corridor where 75% of confirmed whooping crane sighting in North Dakota have occurred, so the likelihood of mortality will be small. Although the primary threats to this species include loss of roosting and foraging habitat and collisions with power lines and fences, only 50 acres (1% of the project area) will be

permanently disturbed. Minnesota Power has committed to marking all new transmission lines associated with the Bison I Wind Project within the whooping crane corridor with bird flight diverters. Minnesota Power will also mark an equal length of existing and previously unmarked transmission lines within the corridor to help reduce the potential for mortality associated with transmission line corridors. Furthermore, Minnesota Power has committed to providing at least \$50,000 towards whooping crane conservation and habitat enforcement efforts in North Dakota.

29. A wetland delineation was conducted for the Bison I Wind Project and the results were submitted to the Commission. Wetlands will be avoided to the extent practicable during the construction phase of the project. If impacts to Clean Water Act jurisdictional waters are unavoidable and less than one-half acre, Minnesota Power will seek project authorization under a Section 404 USACE Nationwide Permit (NWP) application. Permanent impacts to jurisdictional waters will be mitigated according to USACE requirements.

Mitigative Measures

30. No turbines will be placed within 1,500 feet of an occupied residence. Average noise levels at such residences should not exceed 50 decibels (dB).

31. Minnesota Power will maintain ground water protection and soil conservation practices to protect topsoil and adjacent resources, and to minimize soil erosion during construction and operation of the project. Best management practices (BMPs) for erosion and sediment control will be used to minimize wind and water erosion in the project area during and after construction. Only land needed for the facility will be impacted. Temporarily disturbed areas will be restored.

32. Minnesota Power has a legal obligation to decommission the wind energy facilities.

33. Minnesota Power made other representations and agreements as contained in the Certification Relating to Order Provisions – Wind Energy Conversion Facility Siting executed by Minnesota Power and filed with the Commission on August 12, 2009, which is incorporated in these Findings of Fact. The Commission accepts Minnesota Power's modification to Paragraph 17 that it shall bury all underground collection and feeder lines to a depth of at least 42 inches to the top of the lines.

From the foregoing Findings of Fact, the Commission now makes its:

Conclusions of Law

1. The Commission has jurisdiction over this proceeding under North Dakota Century Code Chapter 49-22.

2. The energy conversion facility proposed by Minnesota Power is an energy conversion facility site as defined in North Dakota Century Code § 49-22-03(11).
3. The Application submitted by Minnesota Power meets the site evaluation criteria required by North Dakota Century Code Chapter 49-22.
4. The location, construction, and operation of the proposed energy conversion facility will produce only minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota.
5. The proposed energy conversion facility is compatible with environmental preservation and the efficient use of resources.
6. The proposed energy conversion facility will minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion.
7. The Commission has jurisdiction to ensure compliance with National Electric Safety Code standards in the construction and operation of the proposed energy conversion facility.
8. The proposed project is of such design, location and purpose that it will produce minimal adverse effects

From the foregoing Findings of Fact and Conclusions of Law, the Commission now make its:

Order

The Commission orders:

1. Certificate of Site Compatibility for an Energy Conversion Facility No. ____ is issued to Minnesota Power for the construction, operation, and maintenance of a wind energy facility known as Bison I Wind Project.
2. The site as designated in the Application is located in Morton and Oliver counties, North Dakota, approximately 10 miles northwest of New Salem, North Dakota, and is designated as the site for construction of the energy conversion facility.
3. Minnesota Power is authorized to site and construct up to 75.9 MW of wind turbines in proposed and alternate locations, along with electric collection and communication lines, a project substation, an operations and maintenance building, meteorological towers, access roads and other associated facilities identified in the Application and at the August 25, 2009 public hearing.

4. Minnesota Power shall comply with the rules and regulations of all other agencies having jurisdiction over any phase of the proposed project, including all city, township, and county zoning regulations.
5. Minnesota Power shall obtain all other necessary approvals and permits, including concurrence from the State Historic Preservation Office, and provide copies to the Commission prior to any construction activity associated with the energy conversion facility that requires said concurrence, license or permit.
6. Minnesota Power shall conduct a pre-construction conference prior to the commencement of any construction, and must include a Minnesota Power representative, its construction supervisor, and a representative of the Commission staff to ensure that Minnesota Power fully understands the conditions set forth in this Order.
7. Minnesota Power shall inform the Commission of its intent to start construction on the energy conversion facility prior to the commencement of construction, and while construction is underway, Minnesota Power shall keep the Commission updated of construction activities on a weekly basis.
8. Minnesota Power shall construct and operate the energy conversion facility in the manner described in this application, at the hearing, in the late-filed exhibit, and in accordance with all applicable safety requirements.
9. Minnesota Power shall construct the energy conversion facility in compliance with the National Electric Safety Code.
10. Minnesota Power shall report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species that Minnesota Power becomes aware of and were not previously reported to the Commission.
11. If any cultural resources, paleontological resources, archeological site, historical resource, or grave site is discovered during construction of the facility, earth disturbing activities in the immediate vicinity of this discovery must be halted. The resource must be marked, preserved, and protected from further disturbance until a professional examination can be made in consultation with the North Dakota SHPO. A report of such examination must be filed with the Commission, and clearance to proceed must be given by the SHPO and the Commission.
12. All pre-existing township and county roads and lanes used during construction must be restored to a condition that will accommodate their previous use, and areas used as temporary roads during construction must be restored to their original condition except as authorized by Morton and Oliver counties.
13. Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken.

14. Reclamation, fertilization, and reseeding will be completed by Minnesota Power according to the Natural Resource Conservation Service recommendations, unless otherwise specified by the landowner and approved by the Commission.
15. Minnesota Power's obligations for reclamation and maintenance of the site shall continue throughout the life of the energy conversion facility.
16. When the energy conversion facility is retired, structures and other facilities must be removed in accordance with applicable rules and the areas restored to as near as original condition as is practicable.
17. Minnesota Power shall comply with the Commission's Tree and Shrub Mitigation Specifications attached to this Order.
18. Minnesota Power shall repair or replace all fences and gates removed or damaged during all phases of construction and operation of the proposed energy conversion facility.
19. Minnesota Power shall repair or replace all drainage tile, broken or damaged, during all phases of construction and operation of the proposed energy conversion facility.
20. Staging areas or equipment must not be located on cultivated land unless otherwise negotiated with landowners.
21. Minnesota Power shall remove all waste that is a product of construction and operation, restoration and maintenance of the site, and properly dispose of it on a regular basis.
22. Minnesota Power shall, as soon as practicable, upon the completion of the construction of each wind turbine, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction.
23. Minnesota Power shall provide, if requested, educational material for landowners within the site boundaries about the proposed energy conversion facility, and any restriction of possible danger concerning the proposed energy conversion facility.
24. Minnesota Power shall provide any necessary safety measures for traffic control or to restrict public access to the energy conversion facility.
25. Minnesota Power shall advise the Commission of any extraordinary events that take place at the site of the energy conversion facility, such as tower collapse, extensive turbine failure, injured worker or private individual, mortality events of any threatened or endangered species, or the discovery of a large number of dead birds or bats on the site within five business days of such event.

26. Minnesota Power shall implement a procedure for how complaints concerning the proposed energy conversion facility will be handled by Minnesota Power.
27. All underground electric line crossing of graded roads must be bored unless the responsible governing agency permits Minnesota Power to open cut the road.
28. Where available, at least 12 inches of topsoil over and along open cut areas, roadways, tower locations, and locations of associated facilities must be stripped and segregated from the subsoil and be replaced only after the subsoil is replaced.
29. Minnesota Power shall work with landowners and residents in the area to mitigate any increase in television and residential radio interference that results from the construction of the energy conversion facility.
30. Minnesota Power shall provide the Commission with engineering design drawings showing surveyed structure and collection substation locations prior to construction, and shall obtain approval from the Commission or from Commission staff prior to any changes in those surveyed locations.
31. Minnesota Power shall provide the Commission with as-built engineering design drawings and an electronic version of the as-built drawings that can be imported into ESRI GIS mapping software within six months after construction of the energy conversion facility is complete.
32. The Certificate of Site Compatibility is subject to suspension or revocation and may, in an appropriate and proper case, be suspended or revoked for failure to comply with the Commission's Order, the conditions and criteria of each Certificate or subsequent modification, or failure to comply with the applicable statutes, rules, regulations, standards, and permits of other state or federal agencies.
33. Minnesota Power shall maintain records that will demonstrate that it has complied with the requirements of this Order and each Certificate of Site Compatibility, and that it will preserve these records for Commission inspection at any reasonable time upon reasonable notice.
34. When the facility is at the end of its useful life Minnesota Power will remove turbine structures and decommission the project area in accordance with all decommissioning rules adopted by the Commission and as delineated under North Dakota Century Code § 49-02-27.
35. The authorizations granted by each Certificate of Site Compatibility for this energy conversion facility are subject to modification by order of the Commission if deemed necessary to further protect the public or the environment.

PUBLIC SERVICE COMMISSION

**Tony Clark
Commissioner**

**Kevin Cramer
President**

**Brian P. Kalk
Commissioner**